The making of a LEADER

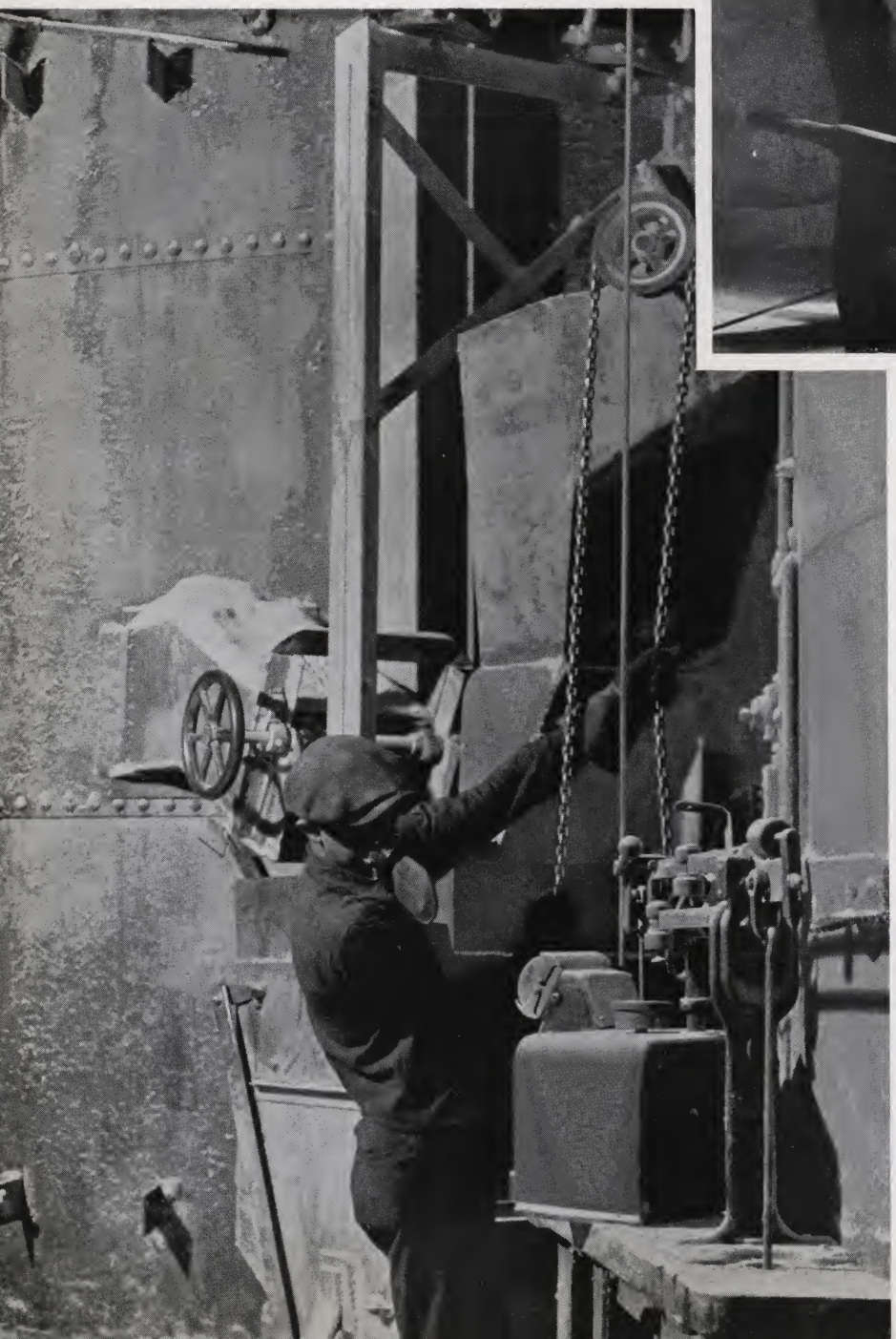
PENNVERNON *Craftsmanship*

PENNVERNON Window Glass is becoming ever more widely recognized as a sheet glass of unusually high quality. The rapidly increasing use of Pennvernon throughout the country proves it. ● We have been asked again and again, "Why is Pennvernon Window Glass superior to ordinary window glass? What is the explanation of its higher quality?" These questions may be answered in two words: Pennvernon Craftsmanship. ● A high type of American worker who is intensely interested in and proud of his work . . . the latest, most modern production methods and machinery . . . continuous research and development of even better manufacturing devices and formulae . . . all these factors enter into the creation and maintenance of the Pennvernon Craftsmanship which makes Pennvernon a better window glass. ● If you could take a trip through a Pennvernon manufacturing plant . . . watch the Pennvernon Craftsmen as they do their work skilfully and painstakingly . . . view personally the processes of melting, drawing, cutting, washing, inspecting, labeling, papering, packing and shipping . . . you would come to a thorough understanding of this craftsmanship. ● But since such a personal visit is in most cases impossible, we offer you this booklet as the next best thing. It takes you through a Pennvernon plant by means of dramatic and interesting photographs . . . describes the processes illustrated . . . and will, we are confident, incline you to agree with us that the elements of Pennvernon Craftsmanship depicted here can inevitably have but one result: the Making of a Leader.

PITTSBURGH
PLATE GLASS COMPANY

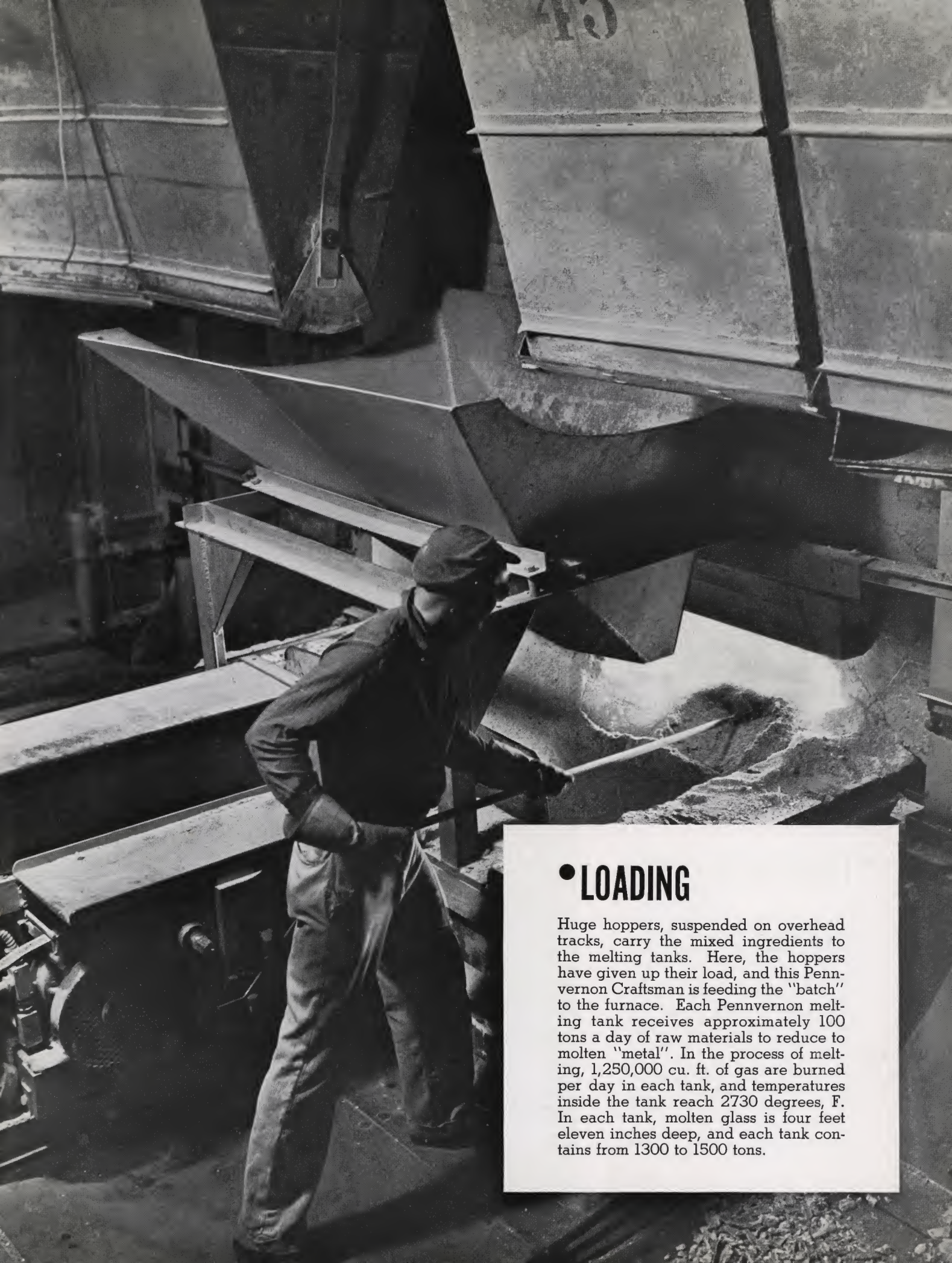
• INGREDIENTS

The first step in the process that makes Pennvernon a leader. Here the ingredients of the "batch" mixture are being accurately weighed to assure uniform results. The proportions of sand, lime, soda, etc., are carefully controlled, according to a special formula . . . and are accurate in weight to a few ounces in many tons. Incidentally, these ingredients are of the best, costing considerably more than those which would be necessary to make just ordinary window glass.



• AUTOMATIC WEIGHING

The large quantities of ingredients used in making Pennvernon Window Glass, must be added to the "batch" mixture in exact proportions . . . and this automatic weighing machine, supervised by a skilful Pennvernon Craftsman, helps to insure accuracy of measurement.



•LOADING

Huge hoppers, suspended on overhead tracks, carry the mixed ingredients to the melting tanks. Here, the hoppers have given up their load, and this Pennvernon Craftsman is feeding the "batch" to the furnace. Each Pennvernon melting tank receives approximately 100 tons a day of raw materials to reduce to molten "metal". In the process of melting, 1,250,000 cu. ft. of gas are burned per day in each tank, and temperatures inside the tank reach 2730 degrees, F. In each tank, molten glass is four feet eleven inches deep, and each tank contains from 1300 to 1500 tons.

•BREAKING UP THE LUMPS

When a new "batch" is added to a melting tank, the terrific heat sometimes fuses the mingled ingredients into lumpy masses which float on the surface of the molten "metal". To assure proper melting, these lumps must be broken up. Here, a Pennvernon Craftsman is shown doing the job with his thirty foot steel poker, his face and eyes protected from the murderous heat and glare of the tank's interior by a wooden shield glazed with blue glass.

•TANK INSPECTION

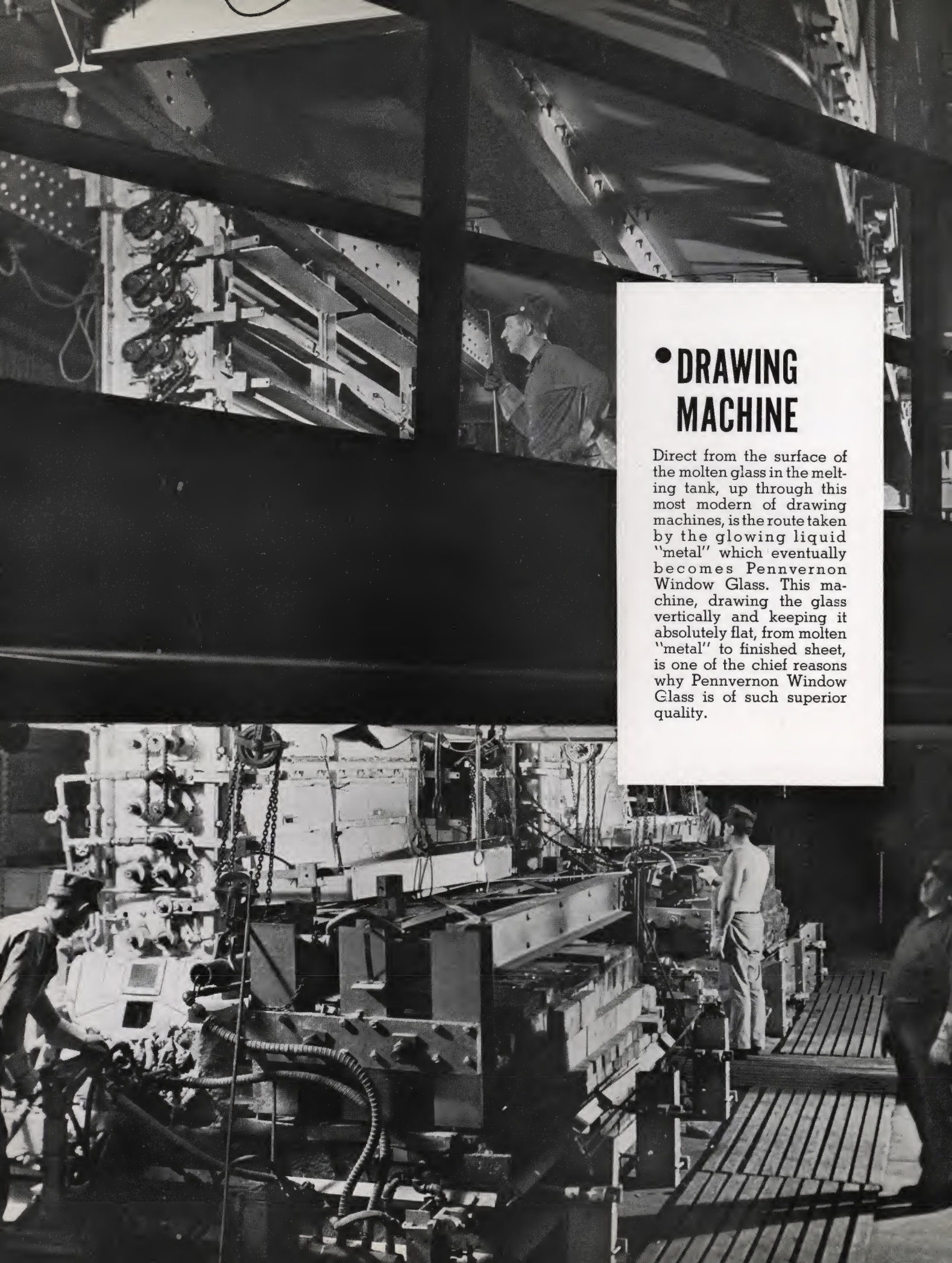
The maintenance of proper temperatures inside the Pennvernon melting tanks is extremely important. This Pennvernon Craftsman, with his pyrometer, constantly maintains a vigil that assures proper melting conditions. To take a temperature reading, he manipulates a knob on the box-like machine at his waist, until the glowing platinum wire in his telescopic spy glass merges with the color of the molten "metal" as seen through the complex system of color filters with which his glass is fitted.

• SKIMMING

Fire is the great purifier, they say . . . but it doesn't purify the Pennvernon "batch" enough to meet the high Pennvernon standards. Here is a Pennvernon Craftsman whose job it is to watch constantly the molten glass within the tank through his little peep-hole door . . . and when defects such as stones, fragments, etc., float by, he dips them off with his long-handled ladle.

• DEPTH MEASUREMENT

The depth of molten glass in Pennvernon tanks is rigorously controlled. Every few minutes, a Pennvernon Craftsman checks the depth of the "metal" with his measuring rod . . . a long bar with a right-angled, vertical bend at the end of it which discloses, upon examination after withdrawal from the tank, the depth of the molten glass within.

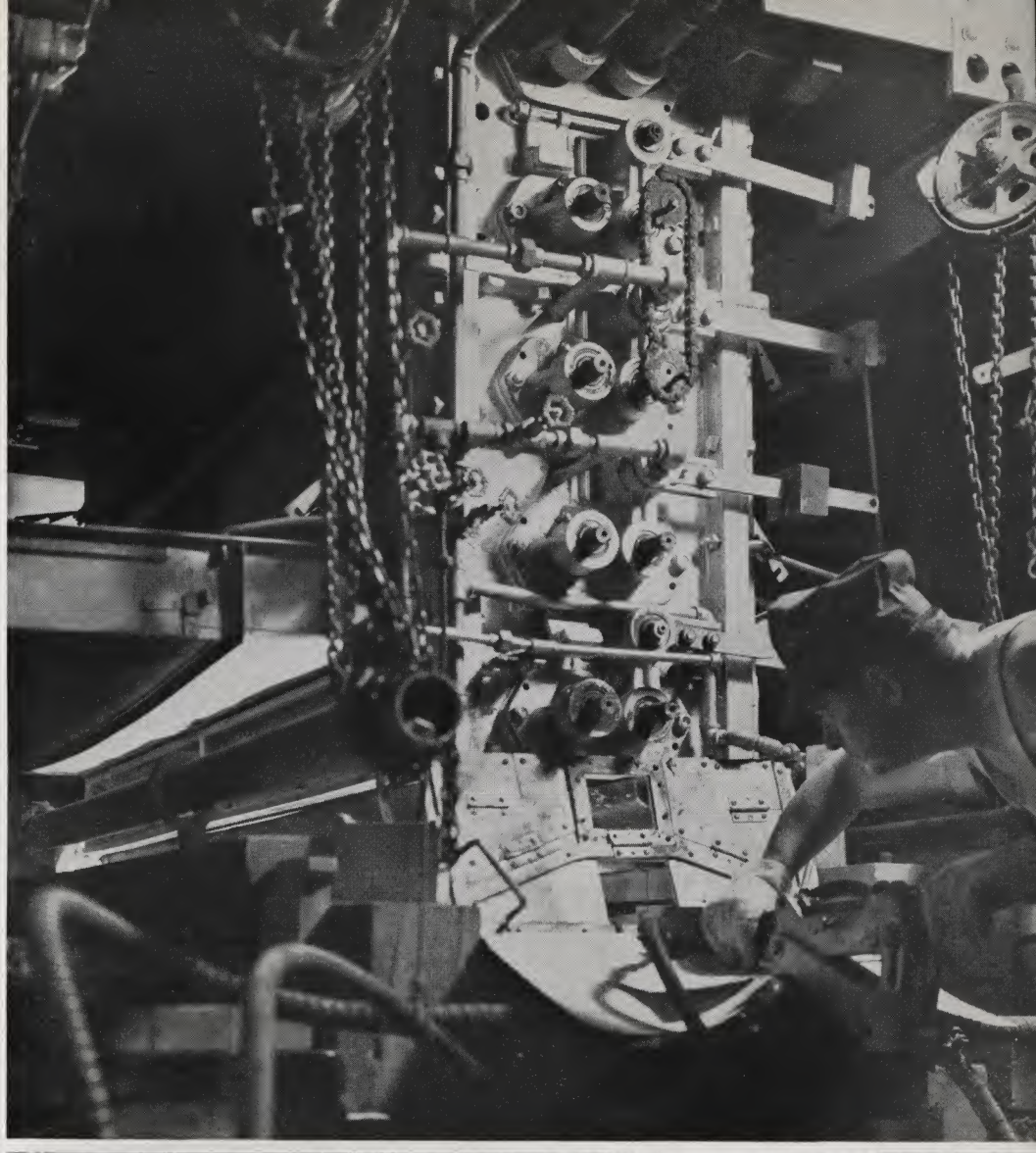


• DRAWING MACHINE

Direct from the surface of the molten glass in the melting tank, up through this most modern of drawing machines, is the route taken by the glowing liquid "metal" which eventually becomes Pennvernon Window Glass. This machine, drawing the glass vertically and keeping it absolutely flat, from molten "metal" to finished sheet, is one of the chief reasons why Pennvernon Window Glass is of such superior quality.

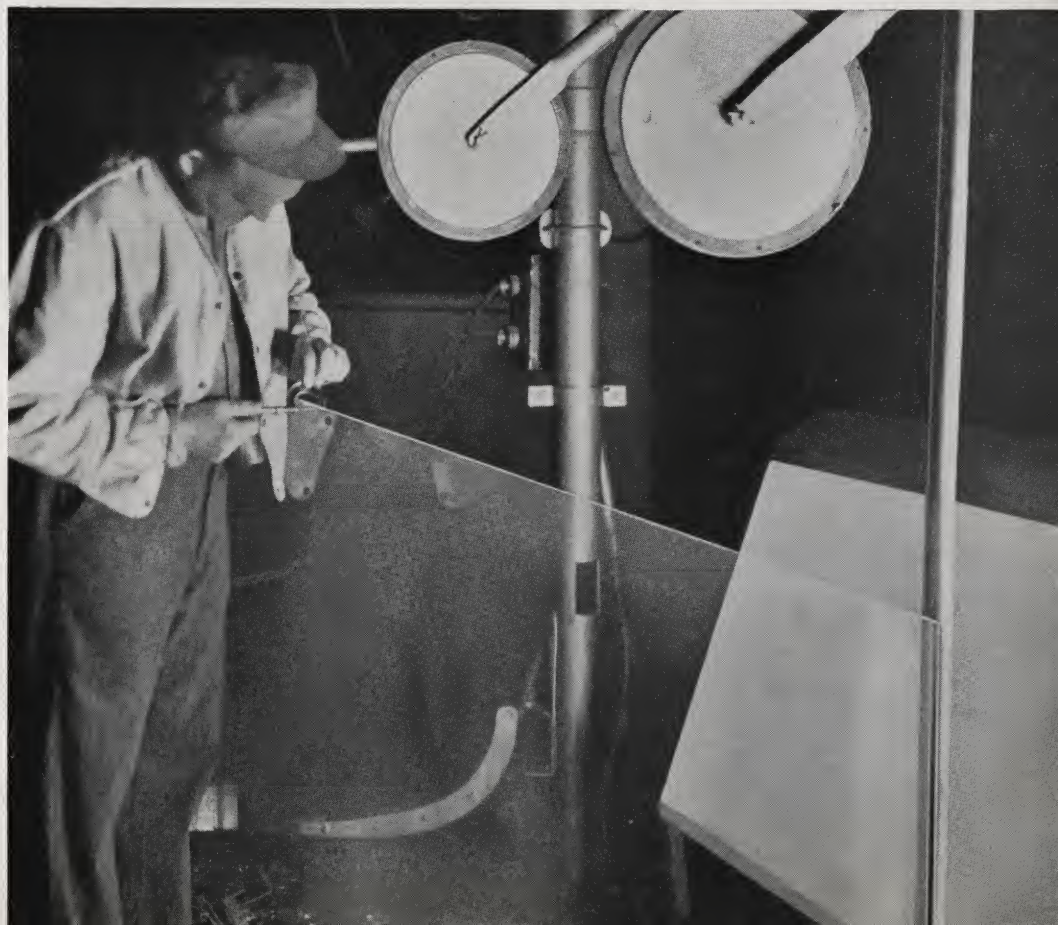
• PENNVERNON PROCESS

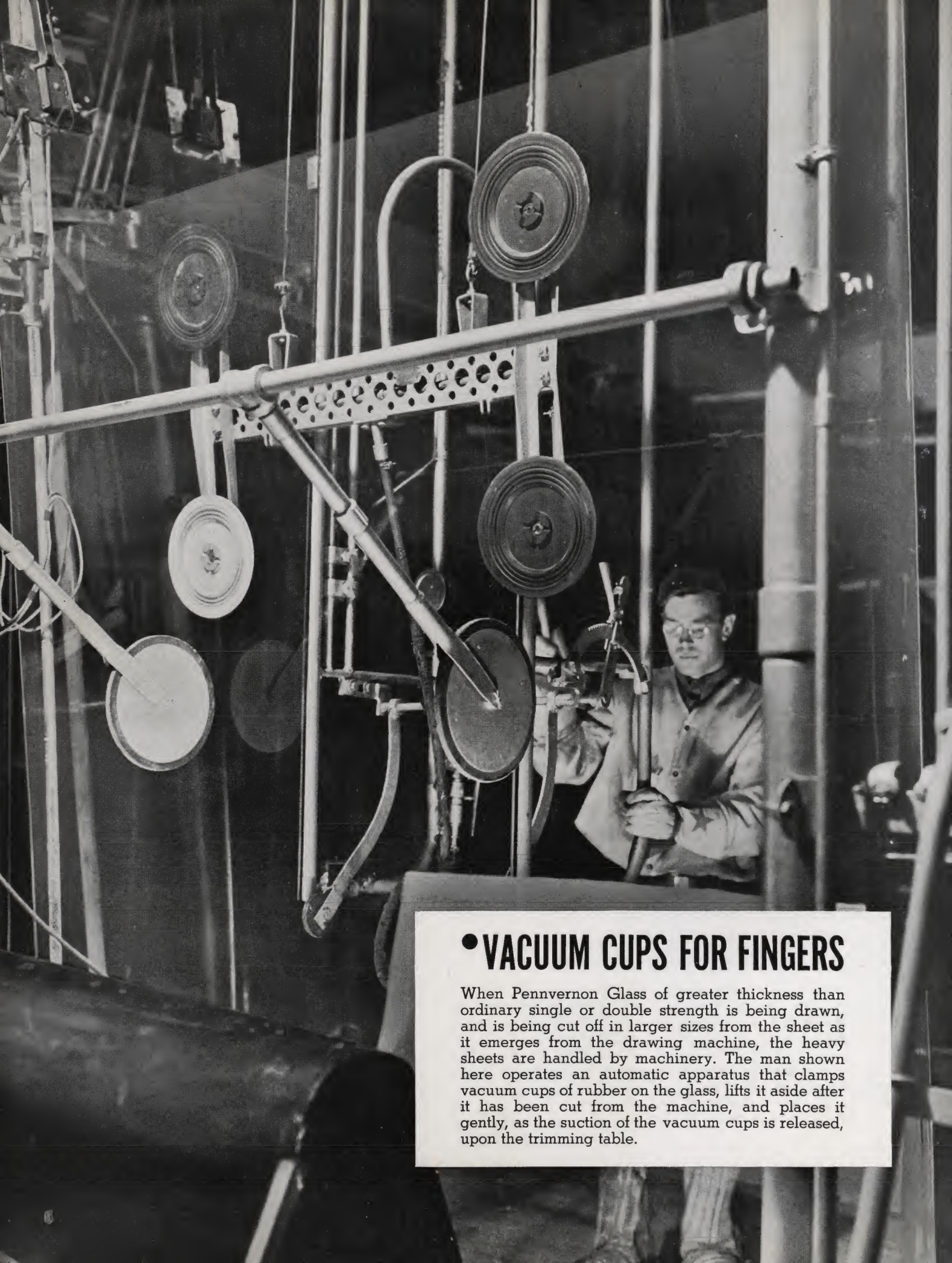
As the molten glass is drawn up into the drawing machine, it gradually cools, until, by the time the slowly moving, new-formed sheet of glass reaches the first pair of rolls seen in the picture, its surfaces are cooled and finished beyond possibility of injury. Nothing can possibly touch and mar the bright, smooth surfaces of the glass during its formative period.



• CALIBRATION

Here, at the top of the drawing machine, thirty feet above the tank of molten glass whence it started, the finished sheet of Pennvernon Window Glass emerges on the cut-off floor. This Pennvernon Craftsman is carefully calibrating the glass to make sure it is of proper and uniform thickness.



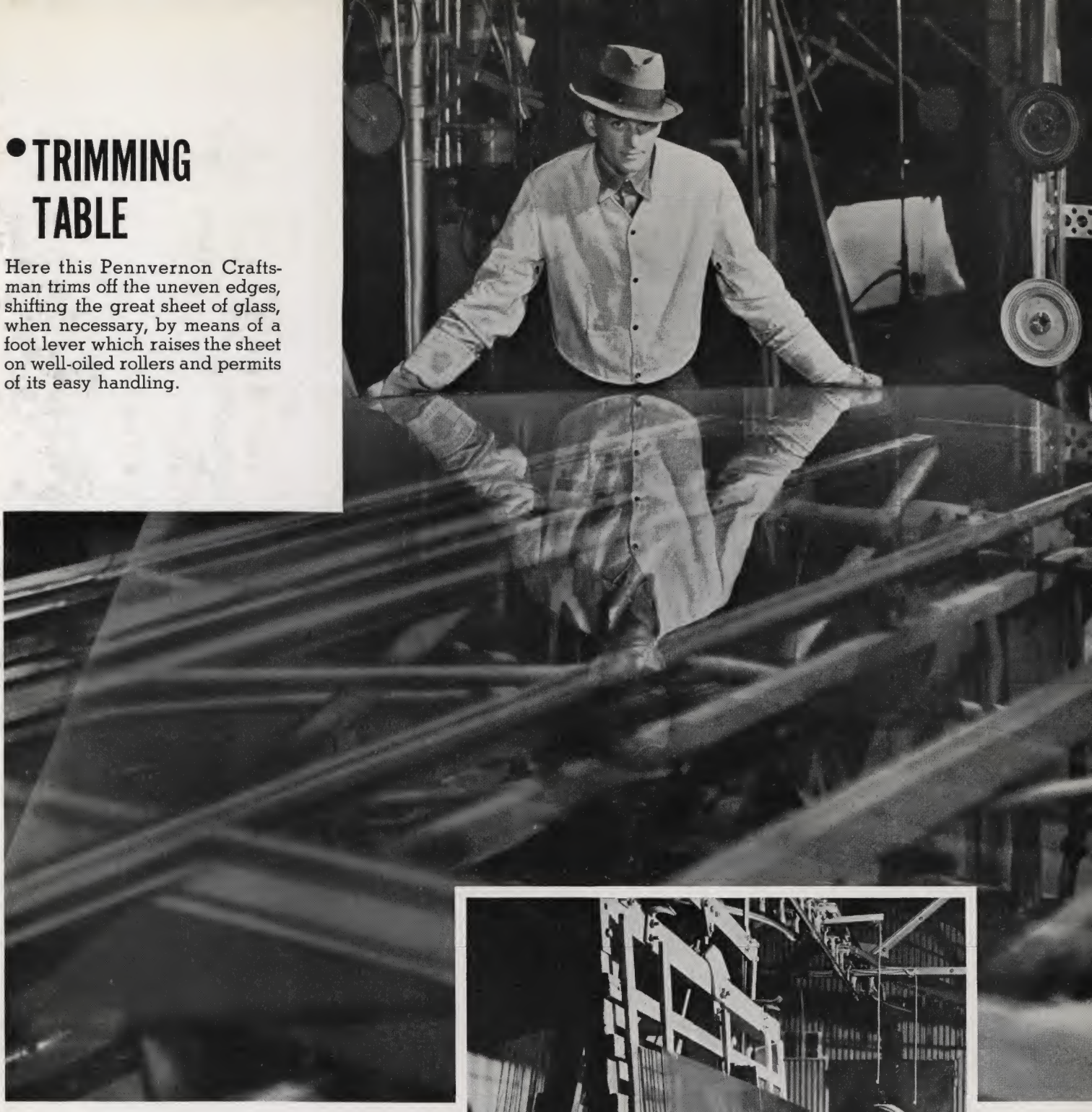


•VACUUM CUPS FOR FINGERS

When Pennvernon Glass of greater thickness than ordinary single or double strength is being drawn, and is being cut off in larger sizes from the sheet as it emerges from the drawing machine, the heavy sheets are handled by machinery. The man shown here operates an automatic apparatus that clamps vacuum cups of rubber on the glass, lifts it aside after it has been cut from the machine, and places it gently, as the suction of the vacuum cups is released, upon the trimming table.

•TRIMMING TABLE

Here this Pennvernon Craftsman trims off the uneven edges, shifting the great sheet of glass, when necessary, by means of a foot lever which raises the sheet on well-oiled rollers and permits of its easy handling.

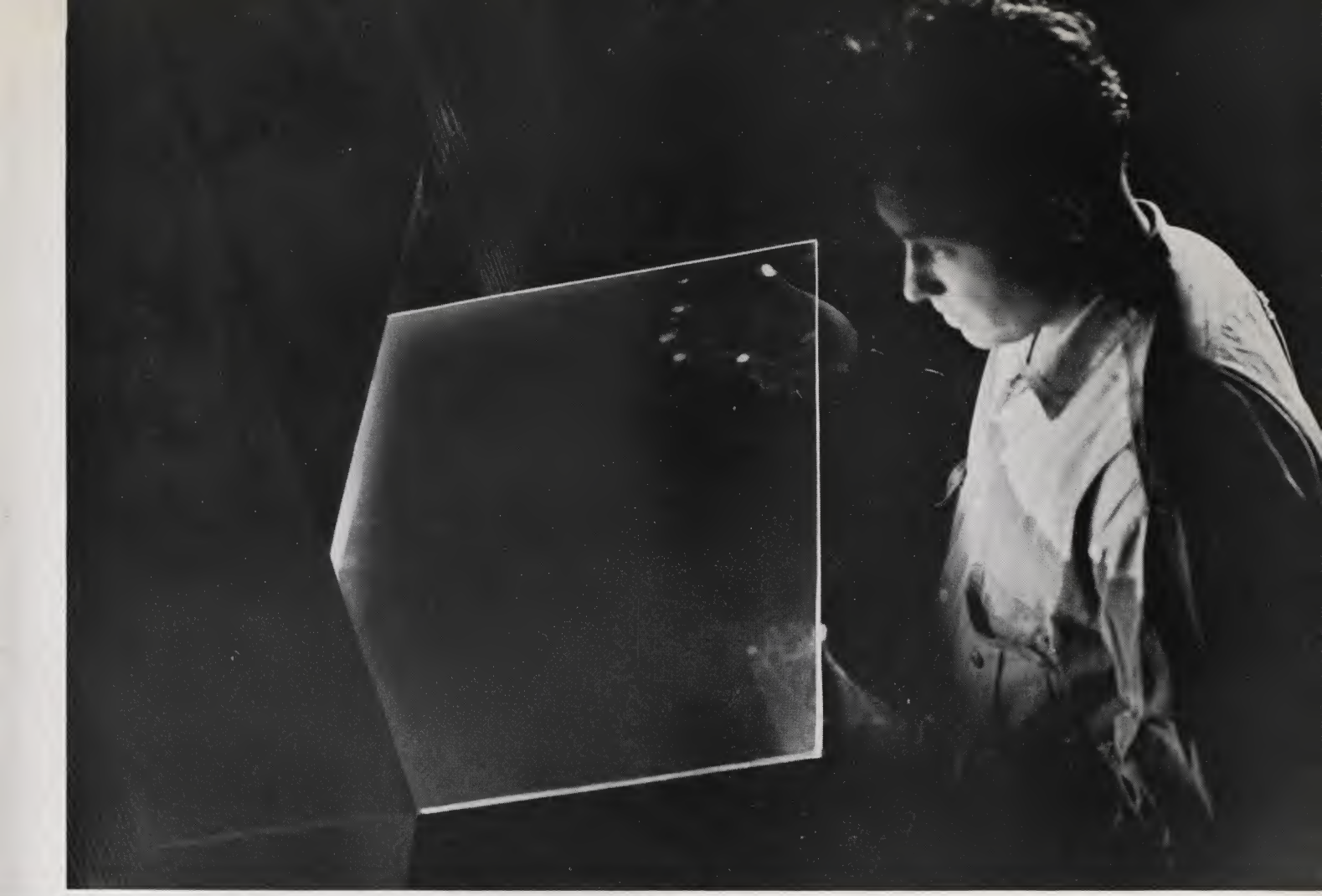


•READY TO LEAVE

Once the large sheets are trimmed, the vacuum cups are again called into service to lift them carefully from the trimming table and deposit them on this suspended trolley. When the trolley is loaded, it is rolled off the cut-off floor into the cutting department.

• CUTTING

Pennvernon Craftsmen like this one, knowing from long experience all there is to know about cutting sheet glass quickly and accurately, take the sheets of Pennvernon as they come from the cut-off room and cut them into the standard and special sizes required to fill the Pennvernon orders pouring in from all over the country. Pennvernon is very easy to cut. A sweep of the arm . . . a gentle tap . . . and the job is done.

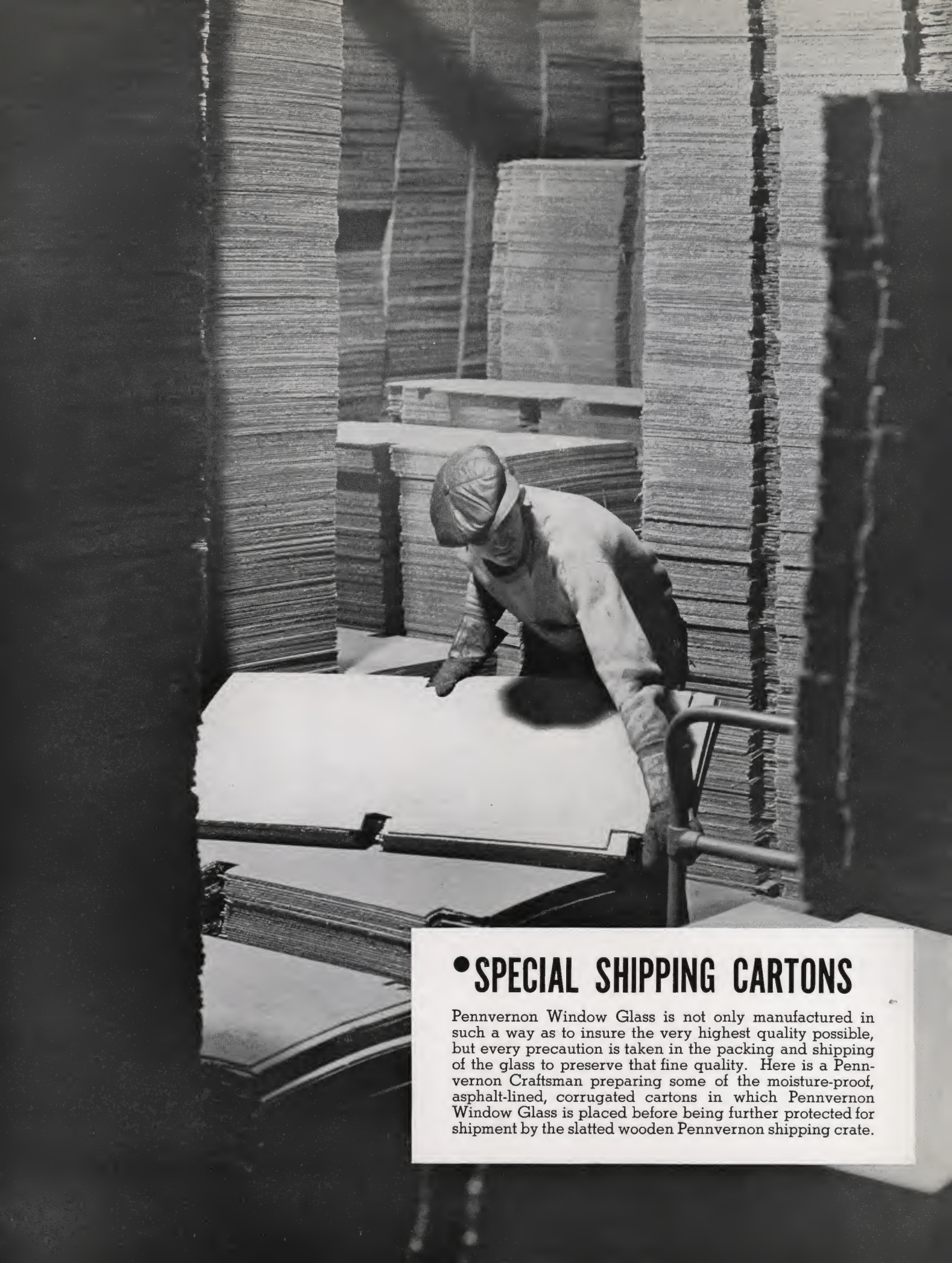


•EDGE INSPECTION

As a check on the grading of the glass, Pennvernon is subjected at frequent regular intervals to a rigid edge inspection. One edge of the light of glass is inserted in the slot of a mercury vapor lamp, and then this Pennvernon Craftsman checks it carefully, by the violet light which illuminates the edges, for seeds, imperfections, etc.

•WASHING

This machine sprays water upon sheets of Pennvernon Window Glass, scrubs the glass on both surfaces with soft brushes to remove finger marks, dust, etc., and dries the glass again . . . all in one continuous operation.



•SPECIAL SHIPPING CARTONS

Pennvernon Window Glass is not only manufactured in such a way as to insure the very highest quality possible, but every precaution is taken in the packing and shipping of the glass to preserve that fine quality. Here is a Pennvernon Craftsman preparing some of the moisture-proof, asphalt-lined, corrugated cartons in which Pennvernon Window Glass is placed before being further protected for shipment by the slatted wooden Pennvernon shipping crate.

•CRATE MAKING

A complete crate manufacturing plant is maintained in connection with each Pennvernon Window Glass plant. Here lumber is sawed into proper lengths, the Pennvernon name and glass size is stamped on the end members of the future crate, and then Pennvernon Craftsmen like this one assemble the units . . . and the nailing machine does the rest.

•PAPERING FOR PROTECTION

Between every light of Pennvernon and the next is placed a sheet of soft, absorbent, non-scratching, protective paper, before the glass is packed in cartons and crates. This painstaking care to safeguard the excellence of Pennvernon, to protect it from moisture and chemicals, to prevent its scratching or being otherwise harmed during shipment, is reflected in the excellent condition in which Pennvernon Window Glass arrives at its final destination for use.

•PACKING

A new method of packing safeguards Pennvernon Window Glass against breakage, staining and scratching during shipment, insures much greater convenience in unpacking and repacking the glass at its destination, and provides greater protection for handlers against being cut by dropped lights, etc. The glass, with sheets of paper between lights, is placed in an asphalt-lined, moisture-proof carton, and then the carton slides easily into the specially designed lightweight Pennvernon wood crate.

•WAREHOUSING

Once packed, Pennvernon Window Glass is shipped to progressive glass jobbers throughout the country, who carry a complete stock of sizes and qualities. The glass is also distributed to Pittsburgh Plate Glass Company warehouses in leading cities. These jobbers and warehouses then supply Pennvernon Window Glass in the desired sizes and qualities to the ultimate users of this fine window glass. Thus ends the long and carefully controlled journey of Pennvernon from raw materials to finished glass in the hands of the consumer . . . and on every step of the way, that indefinable but invaluable quality . . . Pennvernon Craftsmanship . . . makes absolutely sure that Pennvernon Window Glass will be a clearer, brighter, better-looking and longer-lasting glass.

•WAREHOUSES

PENNVERNON WINDOW GLASS

is available through progressive glass jobbers everywhere, and at the following warehouses of the Pittsburgh Plate Glass Company.

AKRON, Ohio
101 Lincoln Street
ALBANY, N. Y.
N. Ferry St., East of Broadway
ALLENTOWN, Pa.
827 North 12th Street
AMARILLO, Texas
Thirteenth and Grant Streets
ATLANTA, Ga.
172-174 Marietta Street, N. W.
BALTIMORE, Md.
8-12 S. Paca Street
BIRMINGHAM, Ala.
912 North 20th Street
BOSTON, Mass.
300-316 Babcock Street
BRONX, N. Y.
144th and Exterior Streets
BROOKLYN, N. Y.
Jay, Water & Plymouth Streets
BUFFALO, N. Y.
101-107 Seneca Street
BUTTE, Mont.
840 Utah Avenue
CHARLOTTE, N. C.
214-216 East 6th Street
CHICAGO, Ill.
431-451 St. Clair Street
CINCINNATI, Ohio
B'way, Court & Eggleston Aves.
CLEVELAND, Ohio
3849 Hamilton Avenue
COLUMBUS, Ohio
324 East Second Avenue
DALLAS, Texas
Santa Fe Terminal Building
DAVENPORT, Iowa
414-428 Scott Street
DENVER, Colo.
Broadway at Market
DES MOINES, Iowa
108 East 4th Street
DETROIT, Mich.
Hamilton & Holden Avenues
EL PASO, Texas
1100-06 Overland Street
FORT WORTH, Texas
321-323 S. Main Street
GRAND RAPIDS, Mich.
21-23 S. Ionia Avenue
HARRISBURG, Pa.
17th and Brookwood Streets
HARTFORD, Conn.
38-40 Chapel Street
HIGH POINT, N. C.
431 Hamilton Street
HOUSTON, Texas
Crawford & Commerce Streets
INDIANAPOLIS, Ind.
59-61 South State Avenue
JACKSONVILLE, Fla.
1252-56 W. Beaver Street
KANSAS CITY, Mo.
5th and Wyandotte Streets
KNOXVILLE, Tenn.
203-211 Humes Street
LITTLE ROCK, Ark.
Foot of Scott Street
LOUISVILLE, Ky.
16th and Main Streets
MEMPHIS, Tenn.
435 Madison Avenue
MILWAUKEE, Wis.
816-830 North Market Street
MINEOLA, N. Y.
49 Windsor Avenue
MINNEAPOLIS, Minn.
616-628 South Third Street
MT. VERNON, N. Y.
556-562 S. Fulton Avenue
NASHVILLE, Tenn.
Grundy St. and 11th Ave., North
NEWARK, N. J.
Elizabeth Ave. & Peddie Street
NEW HAVEN, Conn.
26 Mill Street
NEW ORLEANS, La.
1500 Poydras Street
OKLAHOMA CITY, Okla.
101-103 E. California Avenue
OMAHA, Neb.
14th and Jones Streets
PEORIA, Ill.
913-917 S. Washington Street
PHILADELPHIA, Pa.
16th and Indiana Avenue
(N. Philadelphia Station)
PITTSBURGH, Pa.
632-642 Duquesne Way
ROANOKE, Va.
14-24 Pleasant Avenue, S. E.
ROCHESTER, N. Y.
362 Exchange Street
SAGINAW, Mich.
Fitzhugh and Water Streets
SAN ANTONIO, Texas
1420-1426 S. Alamo Street
SAVANNAH, Ga.
Central of Georgia Terminals
SCRANTON, Pa.
Wyoming Ave. at New Street
SHREVEPORT, La.
Fannin and Commerce Streets
SOUTH BEND, Ind.
1138-1140 S. Lafayette Street
SPRINGFIELD, Mass.
40 Albany Street
ST. LOUIS, Mo.
3900 Chouteau Avenue
ST. PAUL, Minn.
459-461 Jackson Street
SYRACUSE, N. Y.
838 Erie Boulevard, West
TAMPA, Fla.
1006-1008 Ashley Street
TOLEDO, Ohio
2410-2416 Albion Street
TULSA, Okla.
Detroit and Archer Streets
UTICA, N. Y.
615 Eagle Street
WASHINGTON, D. C.
4th and Channing Streets, N. E.
WILKES-BARRE, Pa.
54 Scott Street
YOUNGSTOWN, Ohio
214-218 East Boardman Street

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